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CLAIMS

What is claimed is:

1. A method for determining location information for remote receivers in a communications network wherein signals are directed to the receivers from at least one of a plurality of distinctly identifiable base units in a service area, each of the base units servicing a cell area encompassing at least one zone in the service area which can be occupied by one of the receivers, the method comprising:

communicating between said one of the receivers and the base unit servicing the cell area encompassing a zone occupied by said receiver, including identifying the base unit by communicating with the receiver;

identifying the zone occupied by the receiver and determining at least one of a measure of spatial size, a shape and orientation, a boundary apex, and a boundary line of said zone;

determining a location of the receiver within the zone and interpreting said location of the receiver using a resolution related to said size of the zone.

2. The method of claim 1, further comprising recording at least one dimension of the zone defining the spatial size of the zone, and wherein said determining of the spatial size comprises communicating said dimension to the receiver during communication between the receiver and the base unit.

3. The method of claim 1, further comprising recording a location of the base unit and wherein said determining of the location of the receiver comprises determining the recorded location of the base unit servicing the occupied zone in which the receiver is located.

4. The method of claim 3, wherein said determining of the location of the receiver comprises accessing a positioning system comprising elements external to the communications network to determine an apparent location; determining the recorded location of an adjacent one of the base units

defining the occupied zone; and determining a relationship between the apparent location and the recorded location with respect to at least one dimension of the occupied zone.

5. The method of claim 3, wherein said determining of the location of the receiver comprises determining a relative bearing between the base unit and the receiver and defining said zone as an angular sector corresponding to the bearing.

6. The method of claim 2, wherein said recording of the at least one dimension of the zone comprises characterizing a size of a sector according to a size hierarchy and signaling the size of the sector from the base units

7. The method of claim 6, comprising encoding a size of the sector together with a sector identification code signaled by the base units.

8. The method of claim 2, wherein the zone is equal to the cell area of the base station servicing the receiver.

9. A method for interpreting location information for movable receivers in a communication network, comprising the steps of:

accessing a position determination system to determine point coordinates defining an apparent point location of one of the receivers according to a coordinate system;

determining a precision of said position determination system to thereby define a distance tolerance between an actual point location of the receiver and the apparent point location; and,

locating the movable receiver as occupying a cell defined by a maximum distance from the apparent point location equal to the distance tolerance.

10. The method of claim 9, wherein the apparent point location of the receiver is at least partly determined by communicating with a base unit at a known location, and the distance tolerance is at least partly determined by dimensions of a service area of the base unit in the communications network.

11. The method of claim 9, wherein said accessing of the position determination system comprises accessing at least one of a plurality of alternatively available position determination systems available to the receiver, said alternatively available position determination systems having different distance tolerances.

12. The method of claim 9, further comprising encoding a size of the cell in parameter information broadcast by the base unit servicing receivers in the cell.

13. The method of claim 9, further comprising defining a zone occupied by the receiver within the cell and wherein the precision is a function of a size of the occupied zone.

14. The method of claim 13, wherein the zone is defined as a logical subdivision distinguishing a subset of all receivers occupying the cell.

15. The method of claim 13, wherein the zone is defined as a spatial subdivision of the cell.

16. The method of claim 13, wherein the zone is defined as a spatial portion equal to at least one of the cells.

17. The method of claim 15, wherein the zone is defined at least partly by a bearing between the receiver and a transmitter disposed in the communication network.

18. The method of claim 17, wherein the zone is defined at least partly by an angular sector around a bearing between the receiver and the transmitter.

19. The method of claim 17, further comprising adaptively defining a movable zone by defining a bearing between the receiver and a plurality of transmitters in the communication network.

20. An apparatus for servicing mobile receivers in a service area defined by a plurality of base units serving cell areas adjacent to such base units, the apparatus comprising:

at least one location transmitter providing a location signal accessible to the receivers in the service area;

wherein the base units transmit at least one identifier containing information by which a receiver in the respective cell can determine at least one of a measure of spatial size, a shape and orientation, a boundary apex, and a boundary line of a zone occupied by the receiver in the respective cell.

21. The apparatus of claim 20, wherein at least one of the cell areas is served by a plurality of transmitters each including at least one said base unit and at least one said location transmitter.

22. The apparatus of claim 20, wherein each of the base units transmits a coordinate location of the base unit and a size of the zone.

23. The apparatus of claim 20, wherein the zone is coextensive with the cell.

24. The apparatus of claim 22, wherein the coordinate location of the base unit and the size of the respective cell are defined in parameter information broadcast at least intermittently by the base unit.

25. The apparatus of claim 20, wherein each of the base units transmits a code identifying said base unit, and wherein the receiver is adapted to cross reference said code to at least one of a location of the base unit and a size of the cell.

26. The apparatus of claim 20, wherein the identifier defines said dimensions of the cell by indicating a size category of the cell.

27. The apparatus of claim 26, wherein the size category is represented by a code appended to an identification code of the cell.

28. The apparatus of claim 21, wherein the zone is defined at least partly by a bearing of at least one of the base unit and the location transmitter relative to the receiver.

29. The apparatus of claim 20, wherein the zone determined for at least one particular mobile receiver is defined at least partly by said particular receiver determining an overlap between a location of said particular receiver and a zone referenced to a source selected from among said base units and at least one other said mobile receiver, thereby at least partly defining a zone of said particular receiver.

30. The apparatus of claim 29, wherein the particular receiver is operable to determine at least one of a known location of the source, a known zone size of the source, and a known power level of the source.

31. The apparatus of claim 30, wherein said particular receiver is operable to select among at least two said sources, each having one of known location, a known zone size and a known power level.

32. The apparatus of claim 31, wherein said particular receiver selects an optimum one of the sources to determine the zone of the particular receiver.

33. The apparatus of claim 31, wherein the zone of said particular receiver is determined by a Boolean combination of zones of at least two of said sources.